



MSHA's Accident Prevention Program Safety Idea

**SAFETY
IS A
VALUE!**

“Cutterhead Bit Replacement”

Category : Maintenance
Mine Type: All Underground

Are your crews opening the main breaker when changing the bits on a cutterhead? Are you sure? Recently, a continuous mining machine operator was fatally injured when he came in contact with the cutterhead of a continuous mining machine while it was in motion. There were no eyewitnesses to the accident, but it was reported that the victim had been positioned in front of the continuous miner in order to change cutter head bits. The victim had possession of the machine's remote control transmitter at the time of the accident.

A review of accidents has shown the most hazardous method of changing bits is to use the remote control transmitter to "jog" the cutter head into position. The practice of the operator being positioned near the cutter head while it is rotating is very hazardous and should be avoided.

To ensure that this type of accident does not occur, it is recommended that machine power be removed by turning off the machine's main circuit breaker and **manually** rotating the cutter head into position for bit replacement. This would eliminate the need for energizing the machine and jogging the cutter head into position.

The following is one method suggested to manually rotate the cutter head to safely change the cutter bits:

1. The cutterhead should be positioned at a convenient height and the cutterhead boom blocked.
2. De-energize the continuous miner's circuit breaker at the power center.
3. Unplug, lock out and tag the plug.



4. Mount a bracket or shoe to which a ratchet-type hand crank can be mounted on the frame of the continuous miner behind the cutter head. (The winch can then be removed to protect it during mining operations and stored with the bits, the bit wrench, and hammer.)
5. Wrap the nylon strap around the cutter head and secure it to a bit block.
6. The hand crank should "crank up" a reinforced nylon strap. This is similar to the hand cranks used to pull boats out of the water onto boat trailers or to secure cargo on flatbed trucks.
7. By cranking the handle the cutter head can be rotated safely to the desired position to change the cutter bits.

The mining industry is strongly encouraged to consider and adopt this suggestion. MSHA believes that unnecessary injuries and fatalities could be avoided in the future as a result.

Performing maintenance on energized equipment increases your potential for injury. Manually rotating the cutter head to change bits is a method to minimize your chances for injury. Mine operators need to ensure their employees de-energize equipment before performing maintenance according to 30 CFR Part 75.1725 (c) and 57.12016. The possibility of an injury or fatality during this procedure strongly advocates this additional safety measure, such as locking out and tagging.

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Remember – Safety is a Value that you can LIVE with!